REPORT

February 1974

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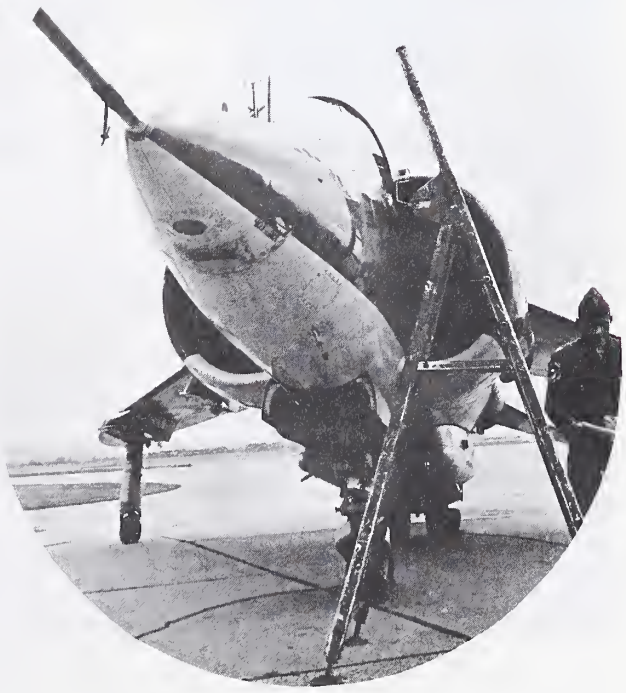

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Volume 17 **February 1974** **Number 5**

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HIGH SCHOOL NEWS SERVICE REPORT

Published monthly during the school year by the High School News Service, a Department of Defense activity located at Great Lakes, Illinois, and distributed free of charge to high schools, colleges and universities requesting the service.

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Army Airborne Training

A 'fun' way to go!

"I see no reason for a man to jump out of a perfectly good aircraft," has long been a standard Army maxim when talking about the merits of being U.S. Army Airborne qualified.

But to the men of the various airborne units, and especially to students of airborne training at Fort Benning, Georgia, there is absolutely no reason to use a truck, jeep or your legs to get to an objective when you can sit down on a plane, take off from an airfield, fly a few minutes and then land right on your objective while the plane returns to the base.

Fort Benning is the place where it all begins for some 16,000 jump qualified members of the U.S. military each year. The Airborne Department of the U.S. Army Infantry School trains personnel from all five of the U.S. services, plus many officers and enlisted men from Allied countries. During training, officers and enlisted personnel are treated equally, regardless of rank. All must take the required training, physical fitness testing, mental and physical stress and all must pass the three week course on the same level or be washed out of airborne.

Recently, training at the Department became co-ed when the Army sent two WAC (Women's Army Corps) members through the course. This was not in preparation for becoming members of an airborne unit, but rather to prepare them for becoming parachute riggers. All riggers are required to attend jump training before transferring to their primary job. The two are expected to be followed by many of their female counterparts.

The first week of training finds the prospective parachutist literally up-to-his-neck in physical fitness training. His day starts with body twists, pull-ups, push-ups, trunk twisters, sit-ups, high jumpers, knee bends and an eight-and-a-half minute mile run. Following the daily PT, there are seven hours of rigorous training that is as demanding as the hour in the PT pit. The majority of students who fail to graduate have PT problems in training.

Training of the potential Army airborne trooper, Marine Force Reconnaissance member, Navy SEAL

An airborne student begins the long slide after exiting door of the 34 foot tower during second week of training.

Students are pulled aloft on the 250 foot tower under a deployed chute.

Along with the training, physical fitness is still uppermost in everyones' mind. Every move is made on the run; every practice move is performed with an aggressive attitude, something that is to be learned, practiced and re-learned. Practiced until it becomes second nature.

The 34 foot tower is included in the first week of training and provides practice in the correct door-exit procedure. "Up six; out 36" is the correct procedure. At the bottom of the drop, students are brought up sharply by the harness straps fastened to an overhead cable. After exiting the doorway, the team member, Air Force or Coast Guard Air-Sea Rescue personnel begins the first week with "ground week."

Practice is the usual remedy for most anything, but in airborne training, it is stressed more so than ever. If a student becomes so accustomed to falling a certain way when he hits the ground that he does it as second nature, legs are not so apt to break or other injuries to occur.

Learning the PLF (Parachute Landing Fall) is the first part of training for the new student. It's practiced from the flat ground – just twisting the legs into the falling position with the arms and hands held tightly across the chest and the chin tucked in, and rolling onto the ground to make the "five points of contact" landing (balls of the feet; calves; thighs; buttocks; push-up muscle (in upper back)).

From the ground, the students move to a two foot platform where they continue training in the PLF: it's jump and fall, jump and fall and then jump and fall again.

The four foot platform is next, and is said to provide about the same jolt as hitting the ground under the chute in an actual jump.

Parachute fills with air as a student is dropped from the 250 foot tower – the highest drop made without an aircraft.

cried count, "One Thousand, Two Thousand, Three Thousand, Four Thousand" is heard. The count becomes a little jagged as the student hits about "Two" and the bottom of the harness rig at the same time.

As he finishes the count at four thousand, the student snaps his head up in anticipation of seeing a 35 foot diameter canopy overhead. Of course, all he sees is the harness rigging and cable, but that quick look could mean his life on an actual jump. If his chute is not deployed or has become entangled, he will have plenty of time to deploy his emergency chute. Every move taught during the three weeks of airborne school has a definite purpose. Each of them leads to a safe, proper jump.

During the second, or tower, week of training, students go over the same methods learned in Ground Week, plus adding a 250 foot free-drop tower to the agenda.

Students are fastened into their parachute harness just as for an actual jump; they are then pulled aloft to the 244 foot mark, hanging below the parachute shroud deployed above them. After they have received last minute instructions and have loosed their safety lines, they are pulled the remaining six feet where they are automatically released to drop to the ground in free parachute fall. Again, the Parachute Landing Fall becomes all important as the students make their first "free" fall. Here again, the height of the tower was selected as being able to make the landing closest to the real thing.

Tucked in and rolling, a student practices his Parachute Landing Fall (PLF) from the two foot platform.

Also during the second week, students are introduced to the dubious thrill of being dragged across the ground by a canopy filled with wind. The wind is provided by large fans mounted on vehicles, and placed strategically for the best training.

During the third and final week, students make five jumps from aircraft flying at 1,250 feet. The planes used are the Air Force's C-141 jet cargo aircraft and the C-130 turbo-prop cargo plane. An Army Caribou C-7 is also available when required.

On the last jump, the students have reached a point they have been striving for for three weeks -- they are really Airborne troops and least, but not forgotten, they get to walk off the drop zone the first walking they have done since checking into one of the Army's most strenuous training areas.

And the instructors' salute, "Airborne!" is answered with a big smile and an "All the way, Sir!"

Looking every bit like a World War II movie, students of Army airborne training land in the drop zone after leaving a C-130 prop-jet cargo plane.

NESEP, PACE, ADCOP

Acronyms to an education

By JO2 Chuck Elrod

When Jimmy Jones came home on his first leave from the Navy, fresh out of recruit training, his former high school classmates weren't too impressed with the solitary white stripe on his sleeve designating him a seaman recruit.

Jimmy came back recently. This time, his buddies were awed when they saw the gold ensign braid and naval aviator "Wings of Gold" Jimmy proudly wore.

How did Jimmy take this giant step? He took advantage of educational opportunities the Navy offers. Enrolling in U.S. Armed Forces Institute courses (USAFI) enabled Jimmy to gain a number of college credits. In addition, he attended college at night, under the Navy's tuition assistance program which paid 75 percent of the tuition.

After receiving his degree, Jimmy applied for Officer Candidate School and was accepted. Upon graduation, his reward was a commission and entrance into Navy pre-flight school.

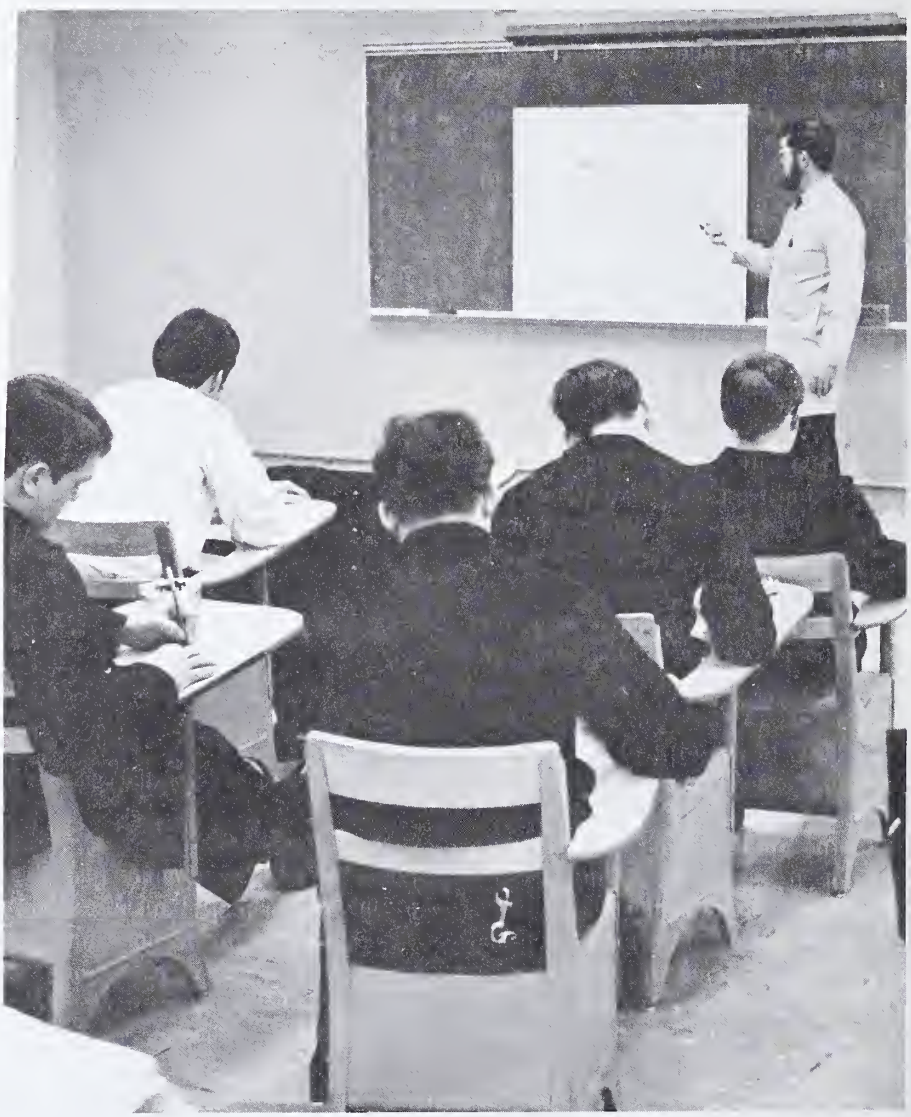
There are other routes Jimmy might have taken which would have led him to officer status.

The Navy Enlisted Scientific Education Program (NESEP) offers qualified Navy men and women up to four years of uninterrupted college education leading to a baccalaureate degree and a commission in the regular Navy or Marine Corps.

NESEP students may study at one of 22 civilian universities and earn a degree in any of 18 major fields of physical science, mathematics or engineering. To be eligible, one must be on active duty and serving in pay grade E-4 or above.

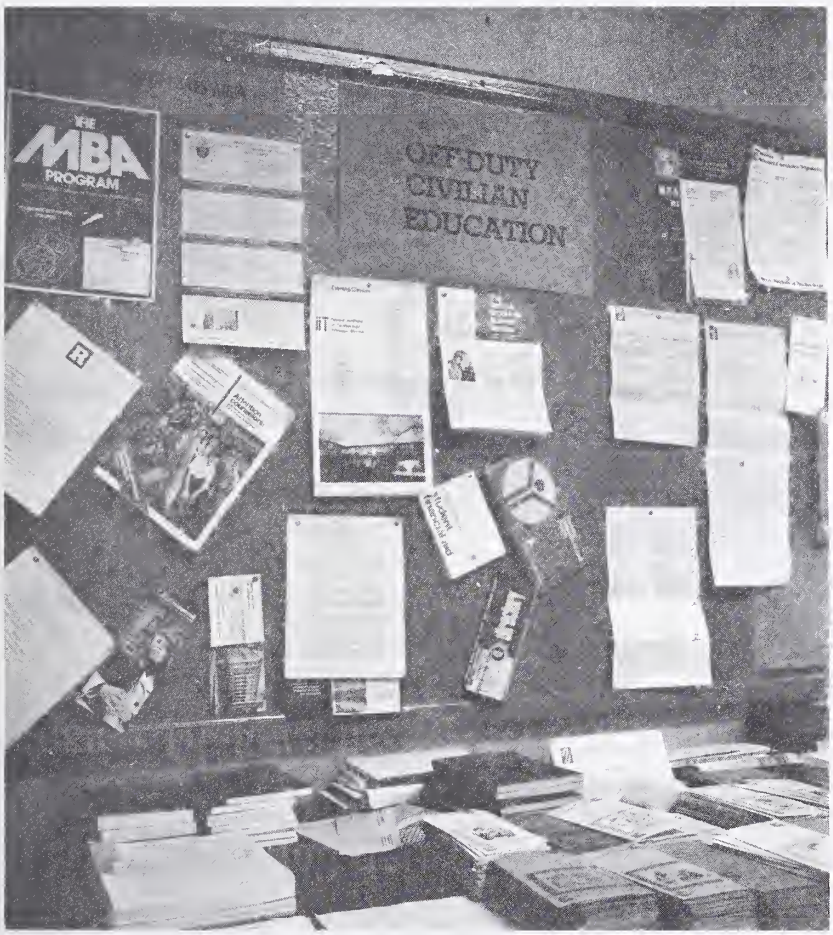
Another means of furthering your education while in the Navy is the Associate Degree Completion Program (ADCOP). It pays for up to two years of study at one of 14 junior colleges around the country and leads to an Associate of Arts or an Associate of Science degree. This program is open to male and female second class petty officers and above, who have at least

Shipboard classes allow sea-going sailors to receive higher education.



Learning to operate computers is only one of many means to advance in the Navy.

A wealth of study material is available to military personnel who have the desire to utilize it.



five years continuous active Naval service.

Naval Reserve Officers Training Corps (NROTC) scholarships are offered at 57 civilian colleges and universities. Selectees are designated midshipmen, and pursue a baccalaureate degree in the field of their choice.

This program pays all tuition, fees, uniforms, books and expenses, and midshipmen receive $100 a month subsistence allowance. NROTC is open to male and female U.S. citizens between the ages of 17 and 21 who are high school graduates.

Still another road to commission status is the four-year nursing scholarship program open to male and female Hospital Corpsmen and Dental Technicians, petty officer third class and above. Selectees study at an accredited school of nursing, and upon graduation are appointed ensign, Nursing Corps. Women applicants must be unmarried upon entering the program.

The Navy Enlisted Dietetic Education Program (NEDEP) offers qualified men and women up to three years of college, a bachelor's degree in medical dietetics, and a commission in the Medical Service Corps. To be eligible, one must be a high school graduate and have served at least one year on active duty in any rate or rating.

The Program for Afloat College Education (PACE) offers seagoing sailors the same opportunity to earn college credits enjoyed by shore-based personnel.

Seven colleges and universities have contracted to conduct college courses for crews on Navy ships. The courses are comprised of a series of filmed lectures presented while the ship is at sea.

PACE offers courses on the first and second year of college level. Grades become a part of the official records of the university, and students may obtain a transcript of work they have completed.

Opportunity unlimited? You bet! Jimmy Jones, like thousands of other Navy personnel, found his road to success by developing his educational potential through the many educational programs offered by the Navy.

The small jet plane sits alone on a grassy area about 80 yards square. The trees raise around it and there is no evidence of a forced landing, nor is the plane damaged.

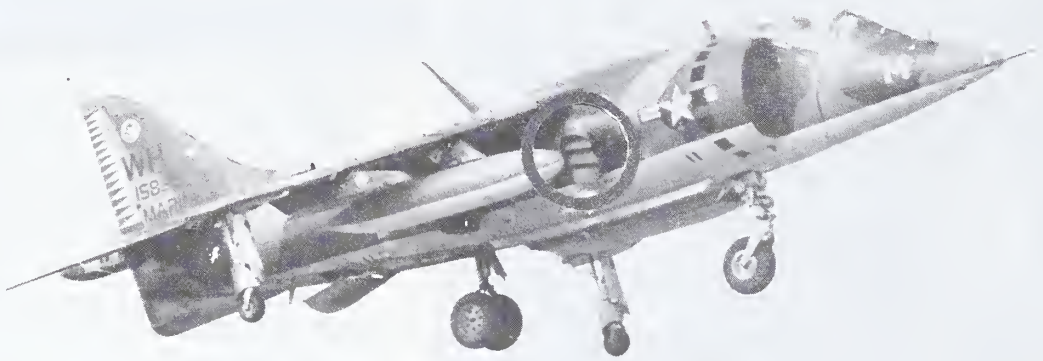
The pilot is in the cockpit with his helmet on. There is no noise; the engine is dead and there is no ground support equipment to get it started.

But suddenly, a whine is emitted from the 13,000 pound light attack aircraft, and the engine begins to climb in rpm. The fuel is ignited and the plane shudders as the pilot checks his instruments during the warm-up phase.

Then the jet, a common enough looking jet plane, yet not really so common, begins to move slowly -- STRAIGHT UP. As it clears the tree tops it rotates to the north a few

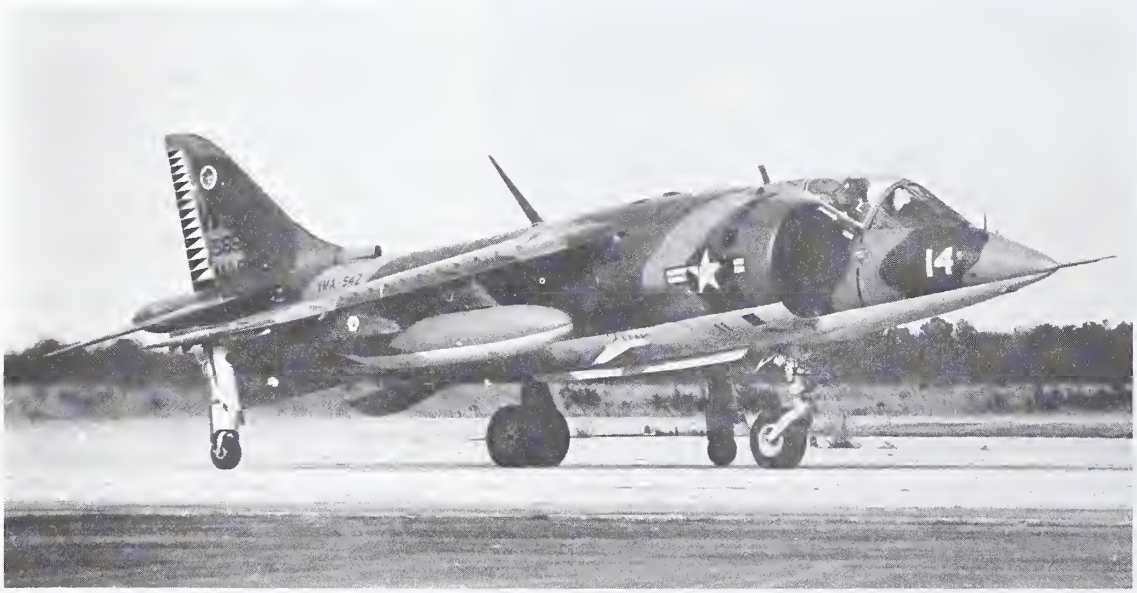
'Straight up' je

close



Thrust nozzles (in circle)

Sleek and beautiful is on



Corps' newest

ir support weapon

ate downward to provide Harrier's ascent/descent force.

r to describe the Harrier.

degrees, then slows in its ascent and begins to move forward, eventually (within 30 seconds) converting completely to horizontal flight.

"Impossible!" is a term that has often been applied to the British-made Hawker-Siddeley AV-8A Harrier V/STOL (Vertical/Short Takeoff or Landing) jet.

But it's not impossible. In fact, it's as possible and probable as taking a jet plane such as the C5 or 747 that weighs hundreds of thousands of pounds and putting it into the air. The Harrier may be even more possible by some standards.

The only amazing thing about the Harrier is that there are no other operational V/STOL aircraft in the free world today. Others have tried to perfect an aircraft for production but have failed.

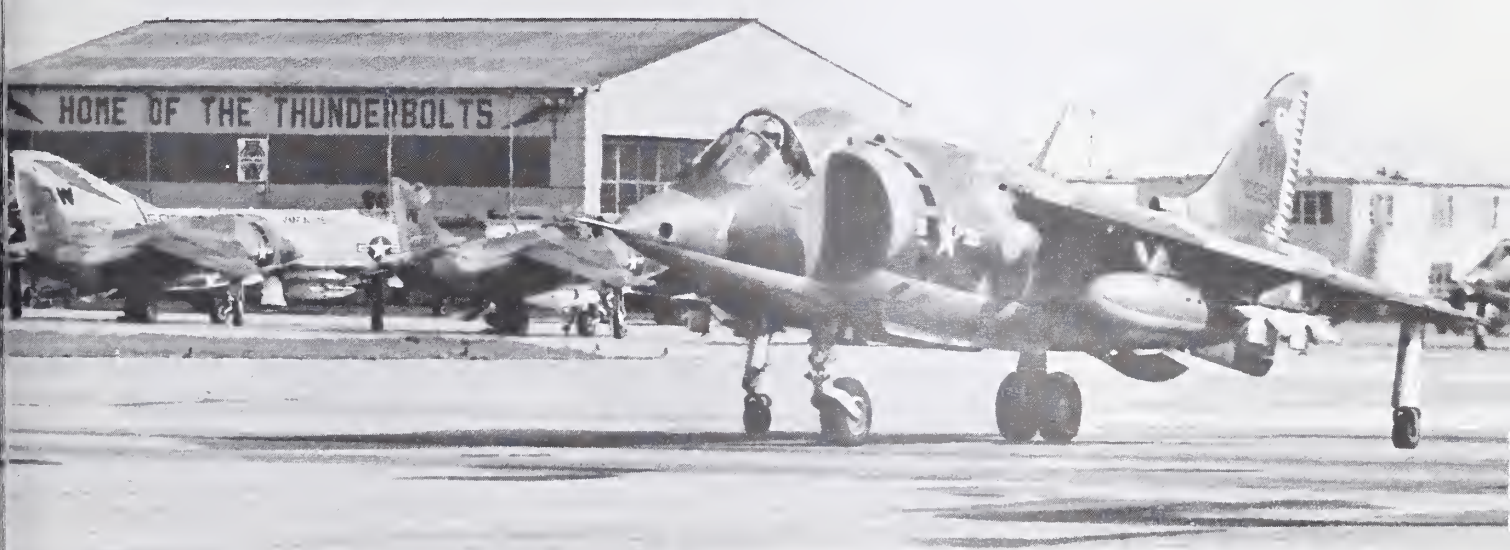
The Harrier is simple when compared to other jet aircraft in the Marine Corps inventory. It's easy to work on, simple to maintain, carries its own support systems, has a tremendous amount of power -- and besides, it's fun to watch in flight . . . and funny!

When you stand at the end of a runway watching a flight of two Harriers make a pass over the airfield and break for the landing pattern as any NORMAL jet would do, there is nothing spectacular about them. True, they are beautiful in flight. But then again, most jets flying in formation are.

It's when they return in the landing pattern that things begin to change.

The first "bird" comes in over the runway, but holds his

Harrier rolls along taxi area as more AV-8A s and F-4 s sit in background (Note smallness of Harrier as compared to Phantom in left of photo.)



Maintenance on the Harrier is simpler than on most aircraft in the Marine Corps inventory.

approach, much too high for a landing. You figure maybe he has decided to "go around." Then, some hundred yards in front of you, the pilot stops his jet in mid-air and begins to let it settle to the ground, slowly and surely, just like a helicopter would do.

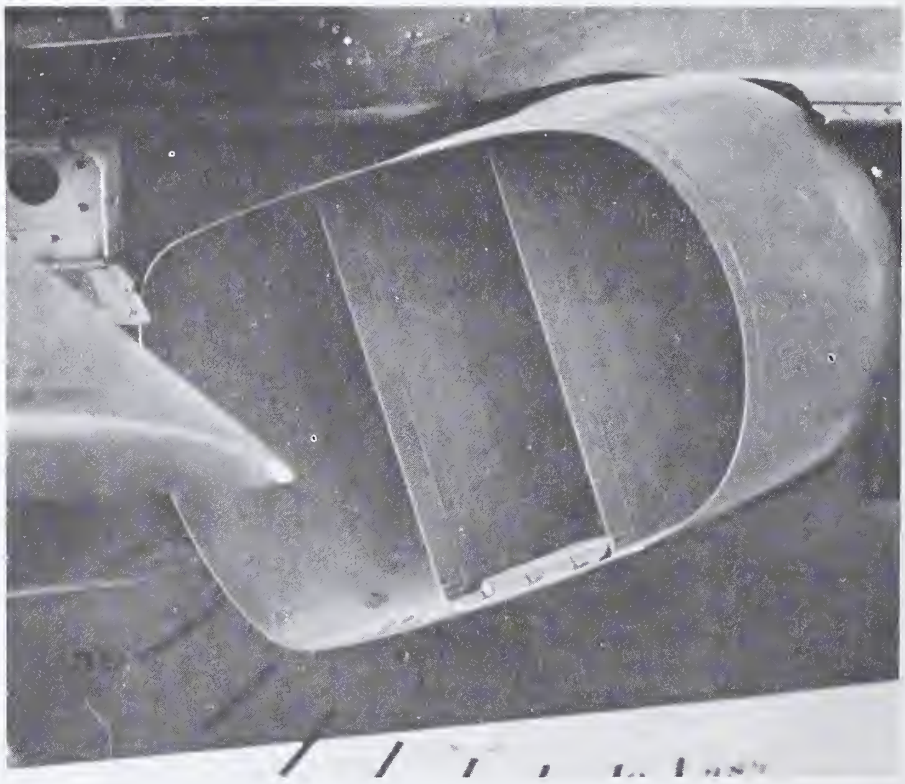
The Harrier's V/STOL capability filled a need for the Marine Corps by making it possible to provide close air support for Marines in a combat situation without having to wait for aircraft to come in from an airfield maybe an hour or more away. With the Harrier, a pilot can go into an area before an operation is to begin, find a suitable location, set the plane down and wait. If and when he is needed, it is only a matter of minutes until he is over the battle, assisting the ground troops, delivering his ordnance and cannon fire with pinpoint accuracy.

Moderate ordnance loads are possible while retaining the vertical take-off capability. Yet, with only a few hundred feet of runway or other suitable surface, the ordnance payload can be increased considerably.

Power for the AV-8A is supplied by the Rolls Royce-produced Pegasus fan-jet engine. Thrust is delivered through four rotating nozzles -- two on each side of the fuselage. The two forward nozzles are "cold," exhausting air that has not been burned, but highly compressed by the fan-jet engine. The rearward nozzles are the hot exhaust, and provide the main thrust for conventional flight.

The nozzles rotate through hydraulic systems from horizontal to vertical. Additionally, there are small stabi-

Forward thrust nozzles blow only compressed, not heated, air. Degrees of rotation provides for vertical or conventional flight.



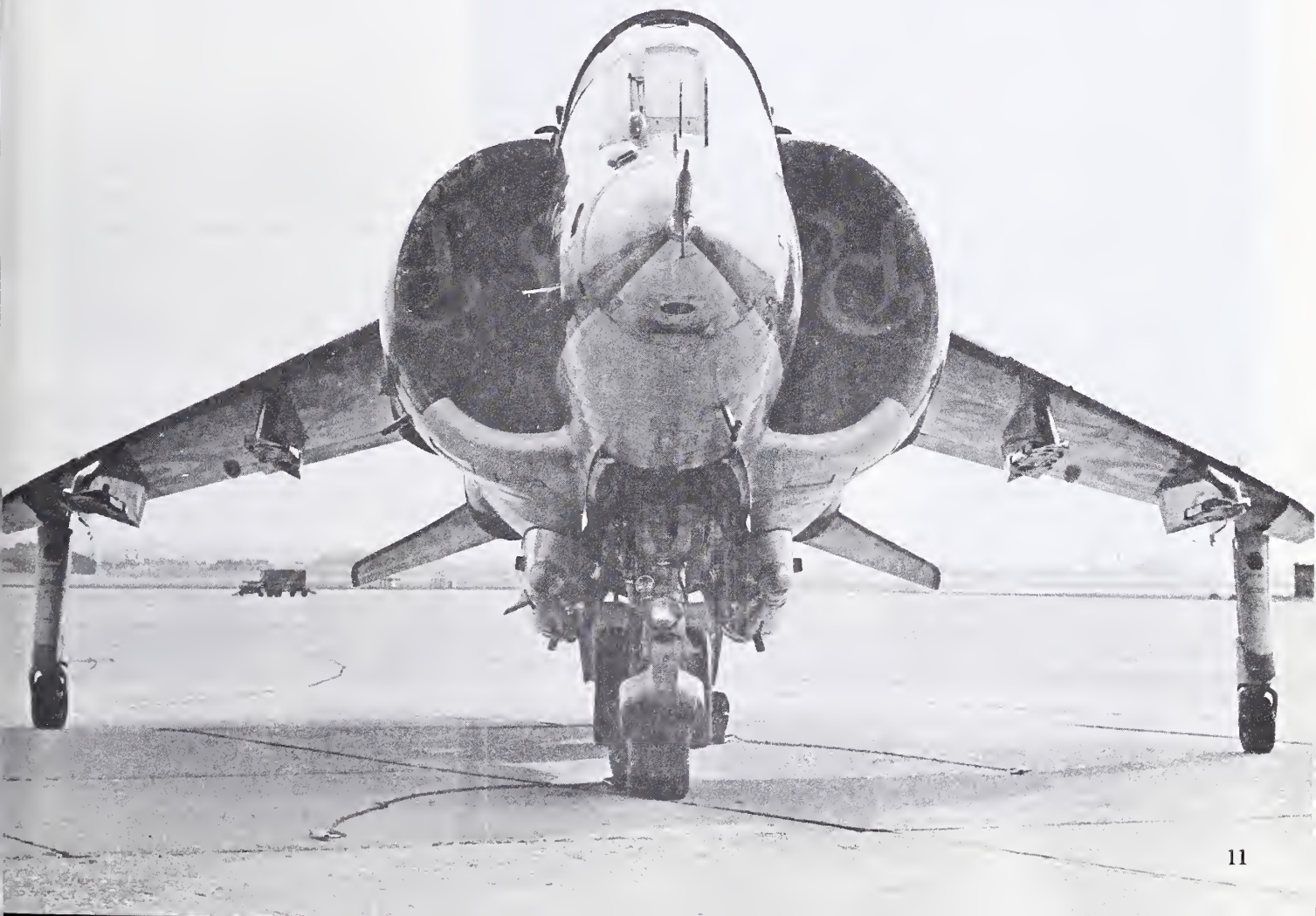
Promotional photo of British-made Harrier shows weapons pods and wing fuel tanks in place.

lizing nozzles in each wing tip and in the rear of the aircraft. Side nozzles in the rear are used to turn the aircraft while in a hover position, and are connected directly to the vertical stabilizer control.

About the only problem with the Harrier so far is changing or making major repairs to the engine. To get the engine out of the aircraft, the wing must be taken completely off. It's a "toughy," requiring about an hour's time to do. But, if that is the only problem the Marines run into with the Harrier, it sounds like they have something up their sleeve -- or on the ground -- that will give the support and capability required for years to come.

So the next time you see a green camouflage painted jet streaking overhead, take a second look. It just might stop so you can see it better.

"BEAUTIFUL!!!"



Vessel Traffic System

Coast Guard's 'traffic cop'

The room is dark and the two Coast Guardsmen on duty strain their eyes monitoring a radar scope and listening to a radio receiver. Though they are not involved in the traditional search and rescue work of their service, they are deeply involved in a life and death struggle going on in San Francisco Bay.

The Coast Guardsmen are part of the new San Francisco Vessel Traffic System (VTS), one of several in the nation designed to prevent ship collisions.

Why a Vessel Traffic System? A quick look at a few accident statistics shows the need for the system.

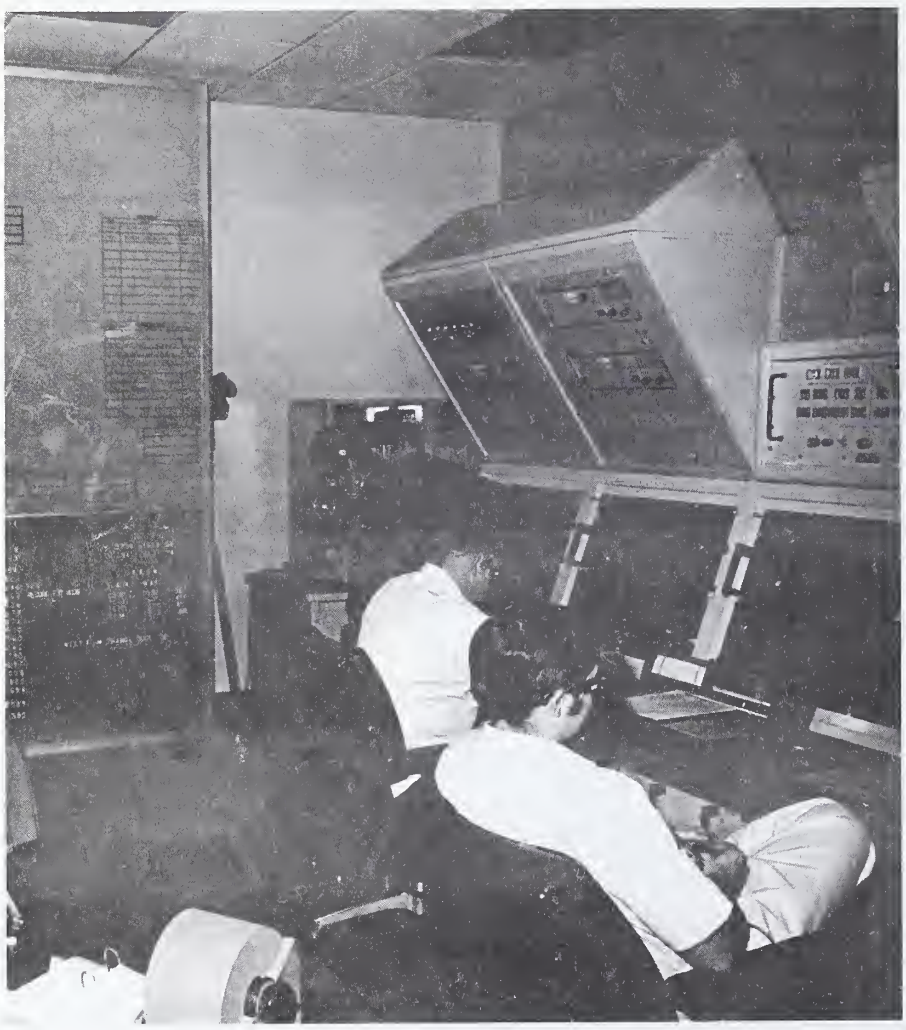
The Coast Guard considers collisions, rammings, and groundings to be preventable. In 1971 alone, there were 1,460 accidents of this type that resulted in over $40 million in damage to ships, cargo and other damage to property. In addition, 75 persons were killed and 62 were injured.

During the same period, 116 incidents caused by collisions and groundings accounted for over 2 million gallons of oil and other pollutants being spilled into U.S. waters.

The San Francisco system of monitoring ship traffic encompasses both radar and sophisticated communications equipment. They're even testing an experimental computerized system. Other VTS's vary according to the area and nature of the traffic.

In Puget Sound, a vessel traffic system consists of 17 mid-channel buoys separating ships transitting in opposite directions much the same way as a divided highway would work. A VHF-FM communications network using four remote sites covers Puget Sound and adjacent waters.

Approximately 50 ship passages a day are monitored and 95 percent of all commercial traffic



Radar scopes provide video report of "happenings" in San Francisco Bay.

in Puget Sound is using the system.

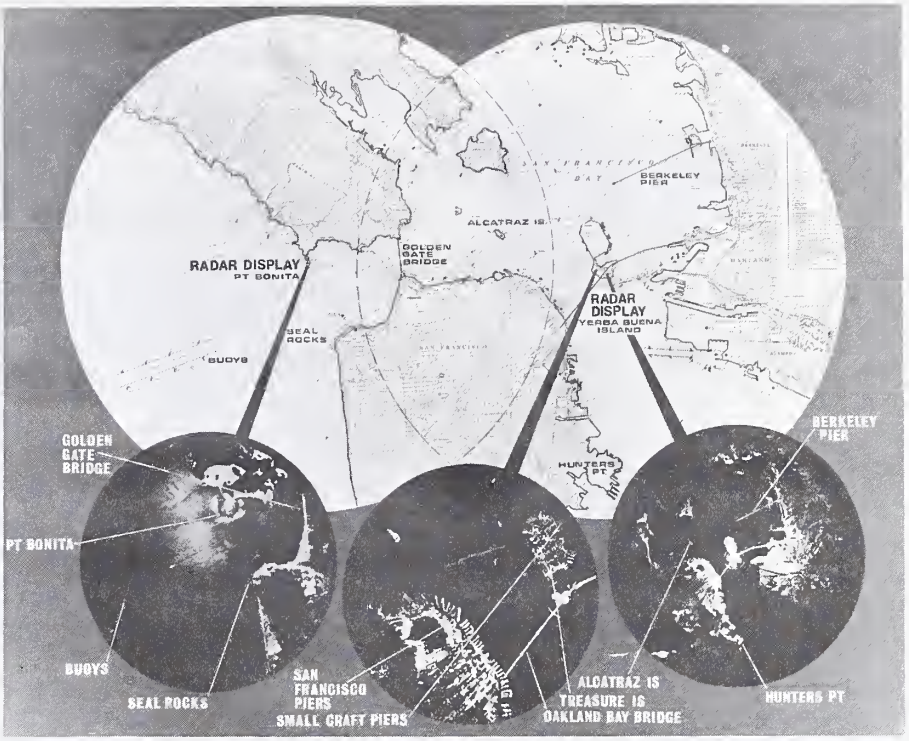
The Coast Guard is hard at work planning new systems for other congested ports and waterways.

Houston Ship Channel is the site for the next VTS and construction has already begun. The system there will make use of communications, radar surveillance and low light level TV coverage of critical areas. The system is scheduled to be completed during 1974.

Other areas include New York Harbor and the Mississippi River south of Baton Rouge.

And, with the possible construction of the Alaska Pipeline, the Coast Guard has already made preliminary plans for a VTS in Valdez, Alaska, southern terminus of the pipeline.

Coast Guardsmen and Vessel Traffic Systems. It may not be the most glamourous of Coast Guard duties. But it is helping to cut down on ship collisions and it is saving lives. That's what the Coast Guard is all about.



Clear definition of Coast Guard radar (lower circles) is shown in relation to San Francisco Harbor navigation charts.

Film gun at left provides permanent record of data as required while Coast Guardsmen keep watchful eye on equipment.

With Pen and Brush ...

T.L. Capes 1973

Master Sergeant Tilton L. "Terry" Capes doesn't have to worry about monotonous, routine work because everyday brings new jobs to do, each one different.

Terry Capes carries Air Force Specialty Code 22371, Illustrator Technician, and runs a one-man graphics section for the Community College of the Air Force at Randolph Air Force Base, Texas.

Terry admits that when he came in almost 14 years ago, he had no idea that he'd become an illustrator. In fact, he really wanted to become a weather observer.

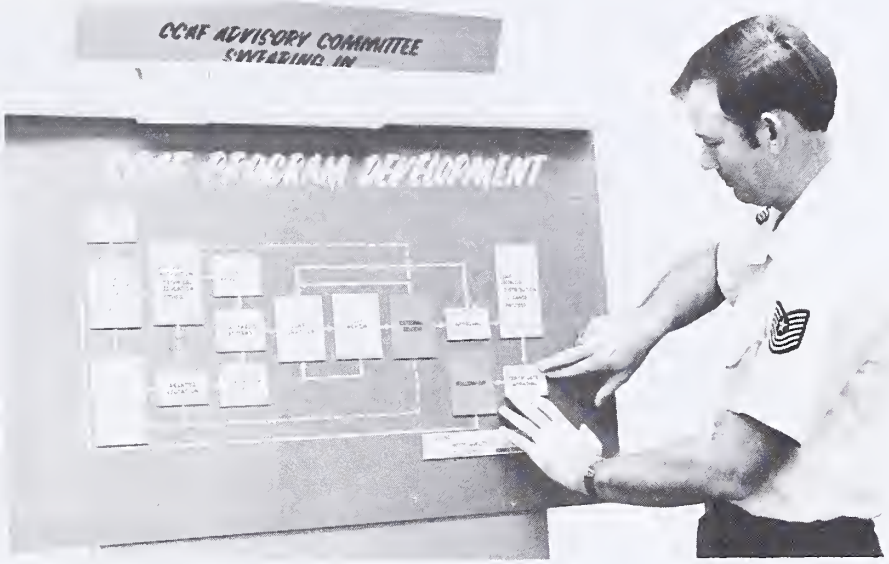
Needs of the Air Force dictated otherwise, and Terry's aptitudes qualified him for training as a draftsman. When the Air Force reduced the number of trained draftsmen it required, Terry was given the opportunity to cross-train into the illustrator field.

Terry's job covers "practically everything," he says. This morning, he might be preparing a "flip chart" briefing for one of the Community College's officers to use at an educational association meeting. A "flip chart" consists of large sheets of paper with information and illustrations on them, which are fastened together at the top so that when placed on an easel, they may be flipped up to show the next page in the sequence.

This afternoon, Terry may be called on to design a certificate for the Community College. This is Terry's forte, the first thing he really enjoys doing. He is an excellent calligrapher (a handwriting artist), and enjoys hand-lettering certificates and other such papers. His practiced hands skillfully and carefully guide his lettering pen in the stylish loops and whorls of the old-style lettering.

Terry prepares 35mm slides of charts and illustrations for use in slide briefings. He prepares certificates, designs forms, and designed the Community College's transcripts. He designs and builds display boards showing the various functions and operations of the Community College. In fact, except for a few cartoons seen taped to filing cabinets and such, Terry has done virtually all the artwork used by the Community College.

"I'm a devout tracer," says Terry. "Much of the actual drawing work done by illustrators nowadays is done by simply placing a photograph on a light table and tracing the scene on a piece of paper laid over it. With the latest improvements in technology, an illustrator hardly need exert himself to turn out professional work. If something is too large or too small, there



are cameras to enlarge or reduce them. Machines photographically print whole paragraphs out on adhesive-backed strips, or, if you wish, individual letters can be transferred to your working surface by rubbing over them with a smooth stylus."

Illustrators wind up in their career field in one of two ways. They are either assigned directly to the field from basic military training or cross-train from another speciality. Once assigned to the field, they take a Career Development Course by correspondence from the Air Force's Extension Course Institute. This course teaches them the various basic tools of their trade and how to use them, such as lettering pens, T-squares, triangles, etc. They learn how to construct graphs and charts, are taught the basics of drawing such as use of perspective and how to shade, overwash, and other such techniques.

Then comes just plain old practical experience: on-the-job training with an experienced illustrator watching over your shoulder and offering helpful suggestions.

"It's a versatile job," says Capes. "You're always challenged by each new project. It's also a job that requires you to be a jack-of-all-trades. You have to be a carpenter, an electrician, and a lot of other things."

Terry Capes may be a jack-of-all-trades, but he's a master of this one.

CCAF PHILOSOPHY

Each airman of the United States Air Force is entitled to the opportunity for personal growth and development through mastery of unified programs of technical, related general, and military studies relevant to the role of the noncommissioned officer.

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